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REGULATION AND LIBERALIZATION IN THE CONSTRUCTION SERVICES SECTOR AND ITS CONTRIBUTION TO THE DEVELOPMENT OF DEVELOPING COUNTRIES

Note by the UNCTAD secretariat

Executive summary

Governments of developing countries should play an active role at national level and in the multilateral negotiations in order to promote development of their construction services sector. Issues for expert consideration may include: (1) domestic policy instruments and strategies aimed at building domestic capacities in construction services, such as upgrading of technological capacity, including improved use of information technology, and electronic commerce, improved access to financing, effective exploitation of opportunities presented by multilateral and bilateral assistance, (2) a strategy for the multilateral trade negotiations which would aim at obtaining meaningful market access for developing countries' firms, while maximizing advantages accruing to developing countries in implementing their complex development and social objectives, (3) specific problems to be addressed in multilateral negotiations, include: domestic regulations technical standards, licensing and qualification requirements and procedures, restrictions on movement of persons, government procurement practices, tied aid, subsidies, transfer of technology provisions, (4) liberalization at the sub-regional level as a way of building export capacities.

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CONTENTS

Chapter			Paragraphs
I.	**Introduction**		1 - 12
	A.	The Scope of the sector	3 - 4
	B.	Market features and trends	5 - 12
II.	**Trade in construction services: the major players**		13 - 20
	A.	Architecture and Engineering Services (AES)	13 - 15
	B.	Physical Construction Services (CS)	16 - 20
III.	**Challenges in promoting growth and competitiveness in the construction sector**		21 - 35
	A.	The special characteristics of the market	22
	B.	Difficulties in access to financial resources	23
	C.	Importance of access to technology	24 - 26
	D.	Multilateral development funding and bilateral tied aid	27 - 28
	E.	E-commerce and construction services	29
	F.	Qualification procedures, technical standards and licensing requirements	30 - 31
	G.	Restrictions on the temporary movement of persons	32
	H.	Commercial presence	33
	I.	Government procurement practices	34
	J.	Subsidies	35
IV.	**Policy options and strategies**		36 - 43
	A.	Promoting competitiveness at the national level	37
	B.	Issues for multilateral trade negotiations	38 - 41
	C.	GATS specific commitments	42
	Annex		
	Tables		1 - 8
	Endnotes		

I. INTRODUCTION

1. On 31 March 2000, UNCTAD Member States decided to convene an Expert Meeting on "National Experiences with Regulation and Liberalization: Examples in the Construction Services Sector and its Contribution to the Development of Developing Countries." The decision was made in accordance with the UNCTAD X Plan of Action (TD/386), paragraph 134 which states that: "UNCTAD should help developing countries in identifying: The priority sectors where the liberalization should take place; the main trade barriers that developing countries face in those service sectors, especially those which limit developing country ability to export their services; the preconditions, at the domestic level, which are necessary for developing countries to benefit from trade liberalization in the service sector in general. Attention should be paid to the opportunities offered to developing countries by opening the economic environment. This analysis should be supported, where necessary, by technical assistance to strengthen their domestic service capacity, and in particular thorough support in the area of policy and legislative adjustments."

2. Thus, at the Expert Meeting to be held from 23-25 October 2000, experts will focus on regulation of the construction services sector, and the impact of liberalization on the development of the developing countries. The discussion will take place against the background of the current multilateral negotiations on trade in services in the WTO, and the negotiating proposals, which have been submitted in that context. Five sets of interrelated issues seem to be most important for consideration by experts: (a) what is the scope of the sector and what interconnected services are important in the delivery of construction projects; (b) what are the new trends and challenges that developing countries face in construction sector in the view of globalization and the internationalization of production; (c) what are the positive and negative experience of countries in regulation and liberalization of construction services sector. (d) what policies should be adopted nationally to improve the competitiveness of companies in developing countries both domestically and internationally; (e) what barriers are limiting trading opportunities to developing country firms and how could they be addressed multilaterally.

A. The Scope of the Sector

3. The construction service sector consists of two sub-sectors of services: (a) architectural and engineering design and (b) construction and related engineering services, termed "physical construction services" in this paper. Physical construction services as defined in GATS involve the implementation of an investment project, and include the following sub-sectors: (i) general construction work, for buildings; (ii) general construction work for civil engineering; (iii) installation and assembly work; (iv) building completion and finishing work; (v) other, which refer s to pre-erection work at construction sites, special trade construction work including foundation work; water well drilling, roofing, masonry, and renting of equipment for construction or demolition of buildings or civil engineering works with operator.[1] This work can be carried out either by general contractors who do the complete construction work for the owner of the project or on own account; or by subcontracting parts of work to specialized contractors.

4. Architectural and engineering design services are essentially intellectual activities, which require general and specialized skills and are knowledge and technology intensive in nature. Architectural and engineering design services are used throughout the development of an investment project, including the stages of pre-investment (e.g., feasibility studies), project execution (e.g., architectural and structural design) and project implementation (e.g., production activities). As defined in GATS, these include architectural services, engineering services, integrated engineering services and urban planning and landscape architectural services. The specifications for material to be used and technological processes followed in general are determined by the architectural and engineering services. In practise this may influence significantly the ability of developing countries to provide services under the specific project.

B. Market Features and Trends

5. The construction industry is seen as barometer of the health of the economy because of its strong linkage to cyclical fluctuations in the economy. Companies postpone spending on construction during periods of economic stagnation, and upon economic recovery start driving their demand for construction once again. On the other hand, governments often invest in the construction sector as a counter cyclical macroeconomic measure.

6. The shares of construction in GDP and employment vary among countries. In 1995, In the lower income developing countries, construction accounted for 2-3 percent of GDP (but much higher for some small countries where major projects are underway; for example, in Lesotho, it represented 24.9 percent). In advanced developing countries, the share is generally between five and seven percent, with roughly the same ratio in OECD countries, However, the labour intensity of the sector is reflected in higher employment shares, near or above 10% in some OECD countries (Japan, Germany, Mexico). The construction services sector is thus a relatively large employer; it draws on a large part of fixed capital formation in an economy, and it provides the essential support for developing a national economy.

7. The world construction market is estimated at US$ 3.200 billion[2]. Over the last two decades, up to 70 percent of construction business opportunities in international markets, as measured by the size of contracts, were found in developing countries, primarily in infrastructure projects; in developed countries, up to 40 percent of similar work was devoted to repair and maintenance.

8. Some developing countries have been exporting construction services successfully and have attained a certain competitive advantage, although they have had extremely limited success in penetrating the markets of developed countries.[3] On the import side, construction services have been an important tool for development because of their role in building industrial and social infrastructure. Increasing competition and the growing technical sophistication of construction processes (which in some cases is possessed by only a few firms worldwide) as well as the size of some projects (which were beyond the reach of all but a few of the largest firms or consortia of firms) has led to a growing importance of partnership agreements and strategic alliances in bidding for and implementing construction projects. However, a number of factors seriously affect the competitiveness of developing countries, while others have impeded their access to markets. These are discussed below.

9. The construction sector has been affected by the rapidly changing economic environment, the privatization of public utilities, the internationalization of production, and the resulting need to adapt business strategies. The majority of private companies in developing countries also face diminishing financial assistance from the government. In recent years, many countries witnessed a contraction of employment in the construction market because of investment in streamlining processes and productivity gains on the one hand, and sluggish demand on the other. Companies have been reshaping and designing new production and marketing strategies both to reduce internal costs of production through outsourcing, externalizing intermediate services and moving into strategic alliances to share costs associated with investing in new technologies, and to spread risks in different market segments and locations all over the world. Increased competition has pushed developed country firms into mergers and acquisitions as well as bidding together, which, however is not a viable option for firms from developing countries facing a liquidity squeeze.

10. Companies from developing countries have increasingly entered into ad-hoc cooperation agreements with companies of developed countries, focused around specific projects[4]. The experience of large manufacturing companies with strong engineering design capacity in developing countries has shown that technology co-operation agreements with developed country partners have helped to reduce organizational and transaction costs, facilitated international sourcing of technology and improved marketing and managerial practices. Developing-to-developing country trade flows have often entailed investment and some forms of co-operation between exporting and importing firms, including joint ventures and joint bidding procedures, and inter-firm co-operation in tapping international financial markets for project financing[5].

11. With the economic slowdown, which occurred at the beginning of the 1990s, companies in developed and developing countries, alike faced increased domestic competition. Companies in developed countries started looking more actively for the opportunities abroad and were quite successful in this strategy[6]. In the aftermath of the Asian financial crises, the regional construction service market was facing structural problems of overcapacity, including in materials, and falling private and public spending. Tightening credit conditions and debt accumulated by many of the companies have put the whole sector at risk, forcing companies – as in developed countries - to look for opportunities outside their domestic market[7].

12. Subcontracting has proved to be an entry point to the international market for small and medium-sized construction firms from developing countries and also transition economies[8]. This appears to be because developing country firms seem to have inadequate capacities for executing overall management of large construction projects and are usually subcontracted for other specialized services. However, recent trends have also produced formal long-term agreements involving knowledge sharing in the design and execution phase of investment projects. Unfortunately, weak domestic banking systems have limited the credits available to construction companies in developing countries. To overcome this shortcoming, companies have been choosing to seek strategic partnerships or equity buyouts. However, finding potential investors – both, domestic and foreign – has proved to be a complicated task.

II. TRADE IN CONSTRUCTION SERVICES: THE MAJOR PLAYERS

A. Architecture and Engineering Services (AES)

13. AES services require general and specialized engineering and other technical and economic skills essential to optimize investment in all its forms: its choice, its technical process of execution and its management. These activities cover a variety of professional services, including: architects to draw up the basic design plans, engineers to select and evaluate technological alternatives, economists to undertake private and social cost benefit analysis, financial analysts to examine the various aspects of project financing, and scientists and ecologists to assess the environmental impacts. The inter-linkages that AES produces between different parts of the economy, in particular between productive units, local R&D activities, capital-goods manufacturers and financial services, are particularly important. AES services contribute to the transfer of technical knowledge among firms and countries at different levels of development including: (i) embodied technology transfer; (ii) formal instruction through training courses; (iii) on-the-job training; (iv) collaborative management; and (v) technological information, including documentation and computer software.[9] Moreover AES produces different outputs according to the stage of an investment project in order to provide the least-cost and highest-productivity solutions, consistent with the economic and social constraints of individual markets. These stages include: pre-investment (e.g., market studies, feasibility and location studies), project execution (e.g., process and product design, architectural and structural design, design and layout of machinery and equipment, purchasing, inspection and testing of materials and equipment); and project implementation (e.g., production activities, technical personnel training, management personnel training; and maintenance).

14. Foreign billings (table 1), i.e. revenues accruing from foreign operations to the top 225 international design firms (engineers and architects) for the period 1986-1998, rose from US$ 3.5 billion to US$ 16.9 billion, nearly a five-fold increase. The largest single market was Europe (32 percent share), followed by Asia (30 percent). Extraordinary growth took place in North America, Europe, Asia and Latin America over this period. However, much slower growth was evident in the Middle East and Africa. In all regions the dominant providers were developed country firms.

15. Among the top ten suppliers (table 2) of international design exports, in 1998 the USA was the largest provider at 43 percent share, followed by the Netherlands at 14 percent, Canada at 8 percent, and the UK at 7 percent. The values of exports from the Netherlands in this sector rose over the period of fifteen years by a factor of ten, those of Japan by a factor of seven, those of the USA by a factor of six, and those of Canada by a factor of five, while market shares from other European suppliers slipped slightly during the same period. The top ten design firms (table 3) are all from developed countries, all reported 32 to 50 percent dependence on international revenues. The top ten developing country design firms are shown along with their rank within the top 200 in (table 4). Only 15 developing country participants are the top 200 of this sector. Moreover, there is a high degree of concentration: of the total revenues of US$ 481 million for the top ten developing firms combined, more than 40 percent is attributable to one Egyptian firm, and firms from the Republic of Korea together account for almost an equal market share. In total, developing country firms

provided US$ 763 million in exports and accounted for only about 4.5 percent of the global total of this sector.

B. Physical Construction Services (CS)

16. Physical construction services are those required for the physical creation of investment projects. They bring together labor, material and equipment in order to translate the techno-economic specifications produced by the architectural, engineering and design services into concrete physical entities such as industrial plants, infrastructure projects and the like. While construction services require general and specialized engineering and managerial skills, they also make considerable use of unskilled and semiskilled labor. Construction firms can be private or state-owned, sectoral or multisectoral, specialized in certain types of engineering design and construction services or highly diversified. The market structure is characterized by a large number of small firms active in limited geographical areas, and a relatively small number of large firms, which compete in the world market for large-scale projects, from which they obtain at least 35% of their total billings. At present in developed countries, for example, large companies are making increasing investments, while small firms are able to succeed only by offering very low bids. Such uneven performance in the industry itself was also found in developing countries[10]

17. Most of firms active in international markets offer packages composed of a wide range of AES and CS services. The strong interrelationships between these services, and their linkages to sub-sectors have created an environment conducive to inter-firm cooperation, including mergers and acquisitions in the industry. CS has a notable impact on labor markets and acts as a stimulus for employment. Often, construction projects bring expertise and equipment from other countries to on site locations. Specialized firms, such as Manpower, supply such labor for construction projects, which did not repeat themselves.

18. Foreign construction contracts show a rise for the period 1986-1998 from US$ 73.9 billion to US$ 116.4 billion, an increase of 58 percent (table 5).[11] Asia was the largest site for international contracts at 29 percent, followed by Europe at 26 percent. Asia, Latin America, Europe and North American showed relatively strong growth over the period while the Middle East and Africa actually witnessed declines. The value of developing country experts in the CS sector share of the total was US$ 69.9 billion, which significantly, represents 60 percent of the total.

19. The dominant players in the international markets are firms from developed countries (table 6). In 1998, USA firms were the largest suppliers at 24.2 percent, followed by Japan at 14 percent, France at 13 percent, and Germany at 12 percent. Over the period, the value of US exports in this sector actually fell, although this was due to a large number of contracts in the late 1970s in the Middle East. The shares of France and Germany roughly doubled over the period while those of Japan rose four-fold. One interesting feature of the sector is that some firms are engaged not in constructing facilities, but in de-constructing them.[12]

20. There is no clear market dominance by any single developed country firm in the top twenty, which also include a sole developing country firm from the Republic of Korea (table 7). The rankings of firms in this industry change from year-to-year, indicating a highly fluid

and competitive market. The top twenty developing country firms (table 8) come from China (7), the Republic of Korea (6), and Turkey (3). Of the top 225 firms, 61 are from developing countries or 27 percent, indicating a substantial capacity for providing construction services exports. Of these 61 firms, 29 are from China, 7 from the Republic of Korea and 7 from Turkey. No other developing country has more than two firms in the top 225. It is important to note that in the early 1990s, the list was dominated much more by developed country firms.

III. CHALLENGES IN PROMOTING GROWTH AND COMPETITIVENESS IN THE CONSTRUCTION SECTOR

21. In addressing the key factors that can influence the growth and competitiveness of the construction sector in developing countries, the following elements require special consideration.

A. The Special Characteristics of the Market

22. As noted above, the market is dual, in the sense that while there are tens of thousands of firms involved in construction, international trade in construction services involves participation in a relatively limited number of large projects, the nature of which (e.g. energy, transportation, infrastructure, urban construction) fluctuates over time. While there are several large firms based in developed countries which have international billings in the billions of dollars, there are many developing country firms which also have significant international revenue. However, developing country penetration of developed country markets has been insignificant. The nature of the business is that there is a considerable amount of sub-contracting and other forms of cooperation between firms, as it is logical for international firms to seek local partners. This provides opportunities for acquisition of experience and access to technology for developing country firms

B. Difficulties in Access to Financial Resources

23. The ability of firms to translate domestic experience into international competitiveness rests on their securing adequate financial resources for undertaking these projects. The lack of proper financing is eroding the competitiveness of developing country firms not only abroad but also in their domestic markets, where they must compete against better financed foreign firms. Weak or underdeveloped domestic banking systems and an inability to tap international financial markets make it difficult for private companies to obtain credit lines, which often carry high interest rates when obtained. Private investment is scarce in developing country markets, and foreign investment is not always available. Moreover, many construction companies are family owned or are in the hands of a small number of shareholders, who are often not willing to dilute their control in exchange for finance through debt.[13]

C. Importance of Access to Technology

24. The strengthening of domestic and export supply capacity, diversification and specialization in the construction services sector relies upon the effective possibilities for developing countries to upgrade continuously their technological capacity. The limited

capacities of most such countries to innovate remains a source of weakness, particularly because of the growing sophistication and complexity of large-scale construction projects. Information technology has greatly improved the management capacity of the physical construction sector, a crucial factor in international competitiveness. However, developing country firms are at a competitive disadvantage vis-a-vis firms from developed countries, where R&D is supported by government grants and where the use of technology-based methods has led to cost-savings and improved competitiveness.

25. In this context, the special strategic role of the AEC sub-sector should be stressed. While smaller than the physical construction sector in terms of international income, AEC services condition the physical construction services through the technico-economic specifications they establish for individual investment projects and elements of machinery and equipment. The AEC sector has been greatly influenced by information technology. In design, for example, services can now be provided cross-border whereas previously this was impractical The diffusion of information technology in the AEC sector has grown over the last decade, especially in terms of increasing developing country capacity. This is reflected in the adoption of computer-aided design and drafting, which results in a tremendous saving in time and labour costs.

26. In most developing countries, limited financial resources make it very difficult to acquire technology on a commercial basis. Technology transfer may be accomplished either through intra-company or company-to-company operations. Developing country firms have used joint ventures to acquire technology from abroad. A study of 50 large projects undertaken by the 36 largest Canadian engineering firms in developing countries[14] has shown that in most of the cases, technology transfer has been conducted under the clients' initiative either because of government regulation or as part of the requirements by the funding agencies. This study identified the setting up of joint ventures as preferable to other contractual forms of transfer of technology.

D. Multilateral Development Funding and Bilateral Tied Aid

27. As noted earlier over 60% of of the international construction market lies in developing countries and much of this demand is financed under multilateral, regional or bilateral assistance programs, with World Bank financed projects accounting for one third of total international contracts in developing countries. The World Bank commitments of about US$ 25 billion per year generate about US$ 50 billion a year in new investments. About 40,000 contracts are awarded to private firms each year and range in size from thousands to millions of dollars. The World Bank uses an international competitive bidding (ICB) process for awarding contracts. A margin of preference is given to domestic companies and related goods, as well as to domestic contracting services in developing countries[15] to permit developing country firms to obtain the experience necessary to compete in the international market. World Bank data on their projects carried out in 1998 and 1999 indicate that while firms from developed countries dominate the bulk of the projects in developing countries, there are opportunities for developing countries to obtain subcontracting on these projects in their own countries or in World Bank projects in other developing countries.[16]

28. Bilateral development assistance in delivery of specific construction projects is often "tied". In effect this often implies subsidies to national firms for delivering services abroad. This can present barriers to other firms operating in third markets or affect the ability of domestic firms to compete on projects within their own market. Tied aid distorts markets and produces unwanted spillover effects such as the crowding out of other types of capital formation. Thus, the fact that much of the demand in the international market is supported by multilateral or bilateral aid programmes, creates advantages for developing country firms in the form of preferences and local content schemes, but penalizes them when aid is "tied".

E. E-commerce and Construction Services

29. E-commerce has a great potential to open the market for construction services to global competition and to improve procurement practices. Cost-saving benefits follow the on-line linking of all parties involved in the delivery of the construction project through cutting down on the time, travel and courier costs related to project management. Numerous e-commerce sites have sprung up – as an extension of firms operating in the industry or new start-ups – providing construction content[17] for business-to-business transactions. To secure global outreach, companies from different countries have been joining in their efforts (e.g. a new company, AECventure, has four partners from the US, Germany and Sweden who are seeking regional partners to widen the scope of their site). The main objective for the construction industry in "going electronic" is to establish a better matching of prospective buyers and sellers, especially in making requests for proposals, bidding and finalizing the transactions over the Internet. Developing countries' participation in such networks may become vital for their trade, and for obtaining specialized information and training. The e-commerce sites (e.g. AECventure Mercadium) backed by large industry groups, are best positioned to benefit from e-commerce by attracting clients and suppliers. Neutrality of portals containing industry information is particularly crucial since they will be supplying information on the available service providers from developing countries. One such portal the US-based http://www.infrastructureworld.com/ provides this service by connecting public experts, private sector consultants, potential partners and suppliers; more than 35% of it is owned by Bechtel Enterprises Inc. (USA). Co-ownership of portals with developing country partners could be one approach. Alternatively, information on developing regions or countries may be provided separately via specialized portals. For example, to cater to the regional construction needs in the Middle East, the portal http://www.gulfbuildings.com/ has been established to provide comprehensive services to all actors in the construction industry, including information on international projects.

F. Qualification Procedures, Technical Standards and Licensing Requirements

30. Firms attempting to penetrate foreign markets for construction services must conform to numerous regulations, including with respect to the use of land, building regulations and technical requirements, building permits and inspection, registration of proprietors, contractors and professionals, regulations of fees and remunerations, environmental regulations, and fiscal policy measures. Licensing is prevalent, and construction services suppliers have to comply with pre-qualification standards covering the environment, site safety and balance-sheet strength, all of which are particularly stringent in developed countries. Such measures are applied not only at the national level, but frequently at the sub-

federal or local government level. In addition, governments often delegate the setting of standards, certification and recognition of qualifications to specialized professional bodies or private-sector associations; thus, the required licenses may be granted by government authorities at a variety of levels, or even by industry associations. This structure creates a series of costly complications to foreign suppliers, diminishes transparency and facilitates collusion among domestic suppliers as well as other anti-competitive practices.

31. As architectural and engineering services fall into the category of "accredited " services, regulations relating to the recognition of qualifications and access to professional titles, as well as membership in professional associations, present difficulties for foreign professionals, complicated in many cases by nationality and residence requirements, and special requirements arising from government procurement practices. [18]

G. Restrictions on the Temporary Movement of Persons

32. Another crucial aspect is the ability of the companies to bring to construction sites people with the necessary expertise at all skill levels. Thus, restrictions on the movement of persons can affect the competitiveness of firms; some firms from developing countries have derived competitive strengths from their abilities to move whole teams of workers at all skill levels to construction sites, and lose this competitive edge when such access is restricted. The movement of foreign nationals is often subject to visa and residency requirements, and economic needs tests, even for project related work of short duration, and frequently with little transparency as regards the criteria applied in the issuance of visas and work permits, which often appear to penalize nationals of developing countries. The principal restrictions on temporary movement and presence of foreign personnel are in the form of "horizontal" immigration, labour and similar legislation.

H. Commercial Presence

33. The supply of construction services abroad does not usually require long-term commercial presence in that country, however, lack of a commercial presence can present a barrier to obtaining contracts. Regulations of more specific content in the construction sector concern mainly the commercial presence of foreign companies. The ability to bring in the capital and other necessary equipment or rent it locally or in a third country is crucial. There have been a series of acquisitions to obtain market presence, notably in the United States.

I. Government Procurement Practices

34. Construction services procured by governments at all levels are estimated to account for as much as half the total demand for construction services[19]. Thus, government procurement practices, which discriminate in favor of domestic suppliers have a significant impact on trade in this sector. On one hand, agencies implementing government procurement seek to obtain the most for the public money, thus are interested in the lowest cost for the quality ratio. At the same time, government agencies may be concerned with other social issues and, thus, give preferences to small local producers to help them obtain expertise and build their capacities while providing local employment opportunities. Alternatively,

procurement contracts may be awarded with conditionality attached, e.g. for the use of local resources.

J. Subsidies

35. Direct government subsidy and other policies, which may indirectly subsidize industries include: direct financial aid, subsidies to R&D costs, subsidies to capital goods, export credits for feasibility studies, government guarantees for private bank loans, export credits for financing the operational costs of particular projects, public guarantees for private banks loans, tax exemptions and public risk–sharing, including the guarantee of a percentage of contractor profits.[20] Developing countries are unable to match the subsidies available to developed country firms which are often enhanced by tied aid as described above.

IV. POLICY OPTIONS AND STRATEGIES

36. The challenge facing developing countries in the construction service sector is similar to that in other service sectors: to devise national policies aimed at strengthening the competitiveness of the sector, while ensuring that multilateral or regional liberalization initiatives complement these efforts and provide meaningful access to international markets. Experts may wish to comment on the specific national and multilateral policy options suggested below.

A. Promoting Competitiveness at the National Level

37. Specific sectoral policies can foster competitive supply capacity in construction services in the domestic and international markets. The main building blocks of such policies would include:

(a) Human resources development with emphasis on the use of information technology. This appears to be crucial for countries that are targeting greater participation in the AES sector, which is itself critical to the later parts of the construction process. Development of managerial skills is of immediate importance for developing countries. One aspect to be considered concerns "brain drain" from poorer countries to more developed markets.

(b) Funding for research and development. This is necessary for countries aiming at developing construction services in specialized markets. Developing countries can, especially in consortia, compete in certain niches of technological advancement.

(c) Technology transfer. This can be encouraged by appropriate government regulations; joint ventures with developed country partners and local content and manpower training requirements have proved to foster the transfer of technology to developing country firms and their acquisition of specialized experience.

(d) Coherent trade policy. This is necessary to support construction firms thorough appropriate taxation and tariff policy to minimize the burden on services exporters.

(e) Banking and finance. Assistance to firms in obtaining adequate financing through strengthening of domestic banking sector, and support to firms in tapping international financial markets, appear to be crucial policy elements.

(f) E-commerce. Embracing e-commerce rests on the availability of the telecommunications infrastructure and competitive pricing for services. An important step, which needs to be encouraged and facilitated, is ensuring the presence in "B2B" (business-to-business) Internet transactions of information on companies from developing countries. Modalities also need to be established to provide more opportunities to companies from developing countries in access and implementation of international projects.

(g) Targeted export promotion policies in construction services. Governments need to raise awareness of firms on the importance of adopting micro-strategies aimed at:

- *Diversification* into new products or their packages, comparable to the innovations that have revitalised banking and financial service industries. These products or packages do not imply the development of new technologies, but rather the refinement of existing technology to special markets or their segments and rationalization of costs.
- *Innovation* in applying new management methods and in diffusion of technology (on-site production of components would substantially cut transportation costs). This is based on combination of skills and their application in new ways.
- *Adopting computer aided new expert systems*. These have been embraced to cut costs and offer better designs and ramifications of design analyses. Adoption of such systems by developing country firms may enhance efficiency in operations without a need for substantive investments.

(h) Regional integration. This may be an option for building national capacities and niches of specialization. Sub-regional integration agreements among developing countries could adopt provisions for the mutual recognition of diplomas and the free movement of professionals, as well as the liberalization of government procurement practices within the free trade area or customs union. This would be one element in the greater integration of services into such arrangement among developing countries as a means of enabling their firms to build up competitive strengths to compete on world markets,

B. Issues for Multilateral Trade Negotiations

38. Developing countries have an opportunity to pursue improved access to foreign construction markets in the current round of GATS negotiations. At present, the debate is focussing on the guidelines or approaches to negotiations on trade in services. Some countries have suggested a "cluster" approach in which a series of sectors and sub-sectors would be grouped together, corresponding to commercial realities.[21] The objective of forming such clusters can be to seek maximum liberalization commitments for the services within the cluster, as well as to subject trade in the cluster, or the implementation of the specific commitments within the cluster, to common multilateral regulatory requirements. This approach draws from the successful experience of the negotiations on basic telecommunication services, where the final protocol included a "Reference Paper" which set out regulatory principles for creating a pro-competitive environment in the sector. In the course of the current negotiations a proposal has been made for a similar approach to the tourism sector, which would incorporate common principles to combat anti-competitive practices in the sector.

39. Thus an objective of negotiations in the construction sector could be to seek the removal of regulatory barriers to increased developing country exports of construction services, so that the efforts at improving competitiveness, such as those listed in the preceding paragraphs could be translated into increased exports by developing countries. A key aspect to be addressed would be a clear identification of the reasons for the apparent inability of developing country construction firms to win contracts in developed country markets. A general approach to the liberalization of a construction "cluster" would lead to greater developing country participation in world trade in construction services only if the barriers impeding developing country access to construction markets in developed countries could be effectively identified and liberalized in the negotiations.

40. In any future negotiations, developing countries, as major importers of construction services, are likely to be requested to open further their markets. This would involve consideration of under what conditions importation of construction service will maximize their national policy objectives, e.g. encouraging suppliers to establish joint ventures, maintaining local content requirements, manpower training requirements etc. It could also be useful to identify common regulatory principles (i.e. the reference paper approach), which could accompany the process of liberalization directed toward increasing the general level of specific commitments. Such possible principles could attempt to provide a more specific operational character to the provisions of Article IV, which included provision for negotiated commitments relating to the strengthening of the domestic services capacity in developing countries, including through access to technology on a commercial basis, as well as the improvement of their access to information networks and the liberalization of modes of supply of interest to them. In this context, the provisions of Article XIX.2 of the GATS, under which conditions may be attached to market access so as to achieve the objectives of Article IV, are particularly relevant.

41. In addition, specific commitments in the construction sector could be complemented by pro-competitive provisions addressed to measures either peculiar to the construction sector, or which were judged to have a negative impact on trade within the sector. Transparency in government procurement polices, licensing, qualification requirements and procedures and technical standards could be subjects for such sector-specific provisions. Thus, in preparing for the GATS negotiations, expert attention would need to be given to identifying the barriers to the exports of construction services by developing country firms, assessing the importance of such barriers and suggesting possible liberalization measures and commitments. In this connexion, the following issues might be borne in mind:

(a) Restrictions to the *temporary presence of natural persons* abroad present a barrier to the participation of developing county firms in international markets. Possible liberalization could include commitments at the sub-sector or occupational level, or sector – wide provisions relating to visas and economic needs tests. A possible approach could be to select professions and occupations relevant for construction services sector[22] and specify the requirements under which foreign nationals would be permitted to supply their services.

(b) GATS commitments in this sector have focused mainly on *commercial presence* i.e. conditions for investment abroad. Trade through foreign affiliates is usually in cooperation with local partners and commercial presence commitments can lead to transfer of

technology and strengthening he construction sector in developing countries if the appropriate regulatory framework is in place. In addition, business trends are shifting towards expanding co-operation between firms, including strategic alliance in bidding, in which consortia of small firms, from both developing and developed countries, join together to bid on larger projects or for projects that are more specialized in requirements. The private sector may partner with the public sector and with non-governmental organizations in consortia to achieve effective economies of scale for some projects.

(c) *Liberalization of barriers to rental and leasing of equipment* may be important for developing countries: less capital is required to lease than to acquire necessary equipment and machinery for implementation of construction project. Companies may choose to lease this equipment with operators from abroad for implementation of the project in the third country.

(d) GATS Article XV obliges members to enter into negotiations to develop disciplines to avoid the trade distorting effects of *subsidies on trade in services*. The OECD Arrangement on Export Credits, currently under negotiation, intends to cover practices in this area and to restrain the use of subsidised export finance, including tied-aid credits for goods and services.[23] Some elements may be useful for consideration in the GATS context.

(e) *Government procurement*. Article XIII exempts all services purchased by governmental agencies for governmental purposes and not with a view to commercial resale, or with a view to the use in the supply of services for commercial resale, from the MFN, market access and national treatment provisions of GATS. The same Article provides that there shall be multilateral negotiations on government procurement on services within two years of entry into force of the WTO (i.e. beginning in 1997), but these have not so far produced any concrete results. Given the importance of public procurement in the construction sector, these provisions in fact exclude much of the trade in the sector from GATS disciplines. However, construction services have been included in the schedules under the plurilateral Government Procurement Agreement to which few developing countries are members[24] (a dispute relating to the implementation of this Agreement in the construction sector has recently been brought before the DSB in the WTO). Developing countries have not wished to participate in the GPA, and have been reluctant to embrace the initiative to establish greater transparency in the pre-Seattle process. This is based on the general perception that by opening their government procurement to international tendering they will permit foreign firms to capture a significant part of their domestic business while their firms will be precluded from gaining access to foreign government procurement markets due to financial and technological weaknesses or due to the various other barriers (i.e. those mentioned above) that they will face[25]. Given the significance of government procurement in influencing trade in construction services, the sector-specific approach to this issue could be considered.

(f) *Multilateral and bilateral funding* could provide a niche for export of services from developing countries, if a pro-development orientation (such as that currently maintained by the World Bank) were to enable domestic construction companies to gain experience and improve their capacities by being subcontracted for implementation of such projects. Although controversial, some observers argue that, in this context, local content and transfer of technology provisions could be one way to offset the adverse affects on

developing country importers and exporters of tied aid. Guidelines for bilateral aid could be liberalized to allow more influence in the project execution by the receiving country and to open "tied aid" to international competitive bidding.

(g) *Domestic regulation*. Meaningful access to markets for construction services requires that measures relating to qualification requirements for companies, also procedures, technical standards and licensing requirements be effectively addressed. The work being conducted in WTO pursuant to Article VI of GATS in a horizontal context could be intensified with respect to the construction sector. Thus, any construction "cluster" could be accompanied by specific provisions for dealing with the multiple regulations and standards applied at various levels of government to ensure that they did not frustrate market access and national treatment commitments. In this context is should be noted that the GATS applies to regional or local governments and authorities as well as non-governmental bodies, in the exercise of powers delegated by central, regional or local governments or authorities.

(h) *Recognition of qualifications of professionals*. National professional associations from developing countries could promote establishment of international standards for professions where common interests exist with developed countries. In addition, they might wish to take an active role in this process so that any eventual agreement on standards would meet their expectations and not become a new barrier. They could also pursue mutual recognition agreements[26] making use of their rights under GATS Article VII.

C. GATS Specific Commitments

42. Among 137 WTO members 78 have undertaken specific commitments in construction services, which identified barriers that foreign service suppliers face in entering their market and in national treatment. All 78 countries, which include the major players in the international markets, have defined – in full or with some limitations – trade barriers for commercial presence. Among them, 44 countries do not impose any trade limiting measures for companies supplying services in construction services.

Barriers to foreign commercial presence[27]

	Market access	National treatment
Developing countries	Economic needs test; permit; authorization; Access only for projects over $100 million; joint venture, partnership, contractual association is required; foreign equity limited to 49 % to 51%; Compulsory sub-contracting system.	Preferential use of local services; Government approval necessary; Employment and training of local executives; License valid for 3 years; joint operation with local company which is a member of Contractors' Association; foreign equity limited to 49 %; one third of joint stock company's board of directors and 50% of staff must be nationals.
Developed countries	Local incorporation is required; Exclusive rights for construction, management and maintenance of highways and airport; Nationality condition for managers of the board of directors.	Non-resident must make a deposit or guarantee under the contract (4 or 6 per cent of the contract amount)

Annex[28]

Table 1
Regional distribution of foreign billings of the top international design firms
(Millions of US dollars)

Year	Africa	Asia	Latin America	Middle East	Europe	North America	World
1986	855	982	321	907	314	161	3,540
1987	949	1,134	435	742	532	231	4,017
1988	824	1,158	322	809	622	429	4,200
1989	938	2,000	444	803	1,770	1,434	7,422
1990	894	2,340	648	1,210	2,340	1,370	8,829
1994	1,178	3,327	872	1,020	3,171	1,590	11,183
1995	967	3,523	826	1,045	3,420	1,261	11,012
1996	1,169	4,507	1,100	1,293	4,414	1,954	14,458
1997	1,175	5,282	1,133	1,357	5,036	1,830	16,031
1998	1,399	5,006	1,608	1,701	5,443	1,780	16,972

Table 2
National market share in international design exports (Millions of US dollars)

Country	1983	1985	1990	1994	1995	1996	1997	1998
USA	1,204	1,165	3,728	3,525	4,687	5,808	7,012	7,359
France	361	239	425	533	494	523	631	772
Germany	253	230	422	708	483	699	624	759
UK	592	463	1,539	2,114	832	1,950	2,088	1,133
Canada	269	266	510	668	842	1,077	1,222	1,314
Japan	127	225	285	424	452	612	598	993
Netherlands	203	219	589	1,562	1,417	1,705	1,785	2,194
Other	841	832	1,329	493	1,575	1,834	1,975	2,346
Europe					1,018	960	1,132	1,288
Other					557	874	843	1,058
Total	3,850	3,640	8,829	11,183	11,012	14,458	16,031	16,972

Table 3
Top 10 international design firms
(By international revenues in 1998, millions of US dollars)

Rank*	Firm	Country	Type**	Revenue	Foreign %
1	Fluor Daniel	USA	EC	797	32
2	Nethconsult	Netherlands	E	777	50
3	Kellog, Brown & Root	USA	EC	704	39
4	Bechtel	USA	EC	688	36
5	SNC-Lavalin	Canada	E	619	38
6	ABB Lummus	USA	EC	606	46
7	Fugro	Netherlands	ENV	600	47
8	Foster Wheeler	USA	EC	501	35
9	Jaako Poyry	Finland	E	440	46
10	JGC	Japan	EC	362	45

* Rank thereafter is based on ENRs top 225.
** EC= engineer-contractor; E= engineer; ENV= environmental.

Table 4

Top 10 developing country international design firms
(By international revenues in 1998, millions of US dollars)

Rank	Firm	Country	Type*	Revenue	Foreign %
13	Dar Al-Handasah	Egypt	EA	306	50
35	Daelim	Korea, Rep.of	EC	118	48
49	Samsung	Korea, Rep.of	EC	97	36
58	China Natl Chem.	China	EC	70	38
65	Hyundai	Korea, Rep.of	EC	60	35
80	SK Engineering	Korea, Rep.of	EC	39	27
88	Khatib & Alami	Lebanon	EA	34	35
129	Tahal	Israel	E	17	36
152	China Intl Water	China	EC	11	37
154	Murray & Roberts	South Africa	EC	11	30

* EC= engineer-contractor; E= engineer; ENV= environmental; EA= architect-engineer.

Table 5

Regional distribution of foreign construction contracts[29] (Billions of US dollars)

Year	Africa	Asia	Latin America	Middle East	Europe	North America	World
1986	13.2	17.3	5.2	16.1	11.9	10.4	73.9
1987	9.0	15.5	7.4	13.4	17.2	11.5	73.9
1988	10.1	20.5	7.5	17.4	19.4	19.2	94.1
1989	14.3	24.5	7.6	17.8	25.4	22.7	112.5
1990	15.2	27.1	5.8	19.9	30.4	21.6	120.0
1994	9.1	31.0	6.4	11.0	21.2	13.4	92.2
1995	9.2	38.0	7.2	10.2	28.1	12.2	105.0
1996	9.4	36.4	8.4	10.3	28.8	14.0	107.6
1997	9.5	34.8	9.6	10.5	29.5	15.8	110.2
1998	11.2	33.8	10.6	14.3	30.7	15.7	116.4

Table 6

National market share in foreign construction contracts[30] (Billions of US dollars)

Country	1980	1985	1990	1994	1995	1996	1997	1998
USA	48.3	28.2	43.6	14.9	17.4	21.0	24.6	28.2
France	8.1	6.7	10.4	11.6	16.3	16.4	16.5	15.4
Germany	8.6	5.4	9.2	10.2	11.8	10.6	9.4	13.8
UK	4.9	5.6	12.5	11.4	5.1	8.9	12.7	4.5
Canada				0.2	0.7	0.8	0.9	0.3
Japan	4.1	11.6	16.8	18.8	22.4	17.7	12.9	16.4
Nethrlnd				3.3	3.2	2.4	1.5	5.2
Italy	6.2	8.7	13.4	7.5	9.9	8.1	6.3	4.9
China				2.9	3.0	3.9	4.9	5.0
Korea	9.5	4.8	Na	3.0	4.6	4.8	4.9	4.7
Other	18.2	10.6	14.2	8.5	10.6	13.5	16.3	17.9
Europe	9.2	6.2	6.5	4.6	6.3	8.1	9.9	10.1
Other	9.4	4.4	7.7	3.9	4.3	5.5	6.7	7.8
Total	108.3	81.6	120.0	92.2	105.0	107.6	110.2	116.4

Table 7

Top Twenty International Foreign Construction Firms
(By international revenues in 1998, millions of US dollars)

Rank	Firm	Country	Revenue
1	Bechtel	USA	6,022
2	Fluor Daniel	USA	5,343
3	Bouygues	France	5,280
4	Skanska	Sweden	4,825
5	Kellogg, Brown & Root	USA	4,772
6	Hollandische Beton Groep	Netherlands	3,540
7	Groupe GTM	France	3,438
8	SGE	France	3,359
9	Hocktief AG	Germany	3,312
10	Philipp Holzman	Germany	3,229
11	Bilfinger and Berger	Germany	3,069
12	Foster Wheler	USA	2, 205
13	AMEC	UK	2,180
14	JGC	Japan	2,054
15	TECHNIP Group	France	1,943
16	Chiyoda	Japan	1,890
17	Hyundai Eng. & Construct.	Korea, Rep.of	1,847
18	Obayashi	Japan	1,733
19	Toyo Engineering	Japan	1,682
20	Nishimatsu Construction	Japan	1,643

Table 8

Top 10 developing country construction firms
(By international revenues in 1998, millions of US dollars)

Rank	Firm	Country	Revenue
17	Hyundai Eng. & Construct.	Korea, Rep.of	1,847
35	Joannou Paraskevaides	Cyprus	829*
45	Murray & Roberts	South Africa	565
59	China Petroleum Eng.	China	483
60	Samsung	Korea, Rep.of	468
62	China Harbor Eng.	China	465
63	Paul Y-ITC	China	463
72	Enka	Turkey	378
75	Construtora	Brazil	340
77	China Civil Eng.	China	322
78	Ssangyong	Korea, Rep.of	306
80	POSCO	Korea, Rep.of	261
85	Tekfen Construction	Turkey	243
88	China Road & Bridge	China	236
90	STFA Group	Turkey	233
94	Bufete Industrial	Mexico	225
95	Daelim	Korea, Rep.of	224
98	Hyundai Engineering	Korea, Rep.of	205
100	Dongfang Electric	China	203
101	China Intl Water & Elec.	China	199

* 100 percent of revenues was from overseas work.

Endnotes

[1] See WTO "Construction and Related Engineering Services", S/C/W/38.

[2] Engineering News Record, 5 June 2000.

[3] However, in 1997, firms from several developing countries were active in developed countries markets, Chinese, Korean and Brazilian firms in the EU and USA, ENR 1998.

[4] During the privatisation of the Mexican railway in 1996, the Mexican shipping company TMM brought in 51% and Kansas City Southern Industries 49% of the capital to bid jointly for a concession of the north eastern branches of the railway network.

[5] Malaysian firms co-operated with firms from the Republic of Korea, India, the Taiwan Province of China, and Singapore in the design and construction of investment projects, particularly in infrastructure projects such as the Malaysian-Korean arrangement for the construction of the 13.5 Km long Penang Bridge in Malaysia. In industrial sectors such as textiles, an Indo-Malaysian venture has allowed technical personnel from Malaysia to be trained in the building of modern textile mills.

[6] For example, during the 1990s Spanish construction companies sought to diversify their range of activities and develop a larger volume of international business. As a result, in 1998, Grupo Dragados, San Sebastian de los Reyes did some 25% of its business outside Spain, mostly in Latin America, with diversification towards transport projects and urban environmental services, and it also began modernization and management of the Colombian railway, while Fomento de Construcciones y Contratas SA, Madrid invested in vehicle inspection stations and rubbish collection service in Argentina's main cities.

[7] A leading contractor in Thailand, Italian-Thai Development, succeeded in diversifying into the regional offshore and the Middle East market and generated 30% of income from its business there.

[8] For example, Bechtel (USA), one of the top contractors in the world, found that the establishment of low cost execution centres in India and Saudi Arabia manned by local and third country professionals was more advantageous than subcontracting engineering design work to firms in the UK.

[9] Y. Soubra, " International Competitiveness and Corporate Strategies in the Construction Sector" in Coalitions and Competition: The Globalisation of Professional Business Services, eds. Yaharoni, Routledge, London, U.K., 1993.

[10] In 1999 in Peru, 60% of companies were working at only one-quarter of capacity and were bidding below their costs just to stay in business, while the construction sector as a whole reported exceptional growth of 11.9 percent.

[11] Note that the "trade" figures for AES (foreign billings) and CS (foreign contracts) are not strictly comparable.

[12] Bechtel Enterprises Inc. (USA), for example, has a US$ 27 million contract to dismantle intercontinental ballistic missile silos in Ukraine.

[13] The case of the Republic of Korea demonstrates how the lack of adequate financial resources has led to a substantial decline in earnings since the 1980s. In the early 1980s, the Republic of Korea was the number two construction exporting country trailing only the United States firms with 11 percent share of the global market. For implementation of projects in the Middle East, financing was made readily available in the same market to Korean companies. The combination of stiffer competition and rising labour costs led to its loss of the leading position in this market. By 1990, its share had become negligible and since then it has only slowly rebuilt its standing in the market. However, the importance of finance for the construction industry has now been recognized. Four Korean law firms now specialize in arranging finance for construction projects, including for a thermal power plant construction project in China, a hydro power plant in Lao PDR and for various other domestic and foreign power projects." International Centre for Commercial Law, Korea, http://www.icclaw.com/as500/edit/sk16.htm.

[14] Niosi, Jorge 1995 (1995) "Technology transfer to developing countries though engineering firms – the Canadian Experience", World Development, Vol. 23 No. 10 pp 1815-24.

[15] When at least 30 percent of the manufactured goods in a project originate in the country of work, the bidder can reduce the bid by 15 percent or more if the applicable import tariffs are higher than 15

percent. Likewise, there will be a preference to the local supply and installation of plant and equipment. A domestic civil works contractor is given a preference of 7.5 percent against a foreign contractor. This latter preference is available only to low-income countries.

[16] South Africa, for example, provided services for projects in Uganda, Mozambique, and Lesotho; El Salvador did for a project in Nicaragua; also Trinidad and Tobago for a project in Guyana; Turkey for a project in Lebanon; Hong Kong China for a project in Vietnam; Iran for a project in Tanzania; Algeria for a project in Mali; and Thailand for a project in Cambodia.

[17] Such content could be seen at http://www.construction.com/.

[18] See WTO document "Architectural and Engineering services" S/C/W/44,1998.

[19] WTO document "Construction and Engineering Services" S/C/W/38 1998.

[20] The 1997 Knaepen Package Agreement on Guiding Principles for Setting Premia and Related Conditions came into effect on 1, April 1999. Its key components include the following: (1) an econometric model to assess country risk; (2) initial minimum premium benchmarks assigned to seven country risk categories; (3) some differences in the minimum rates to be applied according to the quality and percentage of cover being provided (i.e. premium rates reflect different related conditions to provide a level playing field from the viewpoint of the exporter); (4) review procedures to ensure that, over time, the rates remain commensurate to risk and do not become inadequate to cover long term operating costs and losses; (5) a comprehensive Electronic Exchange of Information in order to maintain maximum transparency between the Participants. The rules apply to all officially supported export credits whether provided by direct financing, refinancing, insurance or guarantees.

[21] Alternatively, construction in AES services could be included in clusters related to other sectors, such as energy or environmental services. See Rachel Thompson, "Integrating Energy Services into the World Trading System", Washington, D.C. Energy Services Coalition, April 2000.

[22] A useful guide in this respect is the ILO International Standard Classification of Occupations, 1988.

[23] See endnote 21.

[24] Some developing countries which have recently acceded to the WTO have accepted to enter into negotiations to adhere to the GPA.

[25] The counterpoint to this argument is that the services so obtained would be provided at more competitive prices than local firms could achieve (else the local firms would win the contracts) thus stimulating development and growth elsewhere in the economy. Where the balance between these two concerns lies is a matter for judgment by each country.

[26] Mutual recognition agreements have been negotiated bilaterally e.g. between Canada and the United States on the certification of architects, as well as plurilaterally, e.g. the "Washington Accord" on engineering qualifications involving several developed and developing countries. Organization such as the UIA (Union Internationale des Architectes) and the FEANI (Féderation Européene d'Associations Nationales d'Ingenieurs) promote mutual recognition of qualifications. The contact points established by developed countries under Article IV of GATS supply information on the registration, recognition and obtaining of professional qualifications. Developing countries may wish to identify areas and markets of their export interest and request such comprehensive information to be published systematically and in an easy-to-use format.

[27] Based on national schedules of GATS specific commitments in construction services.

[28] Tables are based on data reported in various issues of *Engineering News Record.*

[29] Note: These time series are not directly comparable. The data for 1980-1990 include the top 250 contractors and those thereafter include only the top 225. Moreover, the earlier data is based on a contract basis and the latter on an annual basis. 1996 is an estimate.

[30] As above.